

Lyme Disease

Lyme Disease is a bacterial infection caused by the spirochete bacteria *Borrelia burgdorferi*. The initial outbreak of Lyme disease in humans occurred in Lyme, Connecticut in 1975 and was originally thought to be autoimmune arthritis. The spirochete was not discovered until 1982. Lyme disease was first diagnosed in dogs in 1984. Since that time arthritic, cardiac, renal, and central nervous system syndromes have been well documented. Lyme disease has been documented in cats, horses, and cattle, but its significance is unknown. Lyme disease has been reported in most states within the continental U.S. and is endemic on the east and west coasts, and in the upper Midwest. The bacteria is transmitted by the Deer tick *Ixodes scapularis* throughout the Midwest and eastern states. *Ixodes pacificus* is the vector on the west coast. Both the adult and nymph or immature stage of the tick are able to transmit the disease. Dogs infected with Lyme disease cannot directly transmit the disease to humans. Once an Ixodid tick attaches to a dog it will feed to completion and then fall off. The tick will not transfer hosts and attach to another dog or a human. It is important to keep in mind that if a dog contracts Lyme disease, humans in the same household should monitor themselves closely for signs of the disease since they may also have been exposed to infected ticks.

A basic overview of Lyme disease geared toward human infection, including photographs of various ticks can be found at http://www.cdc.gov/ncidod/diseases/submenus/sub_lyme.htm. For more dog-specific Lyme disease information visit <http://www.thepetcenter.com/gen/lyme.html>.

DIAGNOSIS

The diagnosis of canine Lyme disease in dogs is based on a combination of history of potential exposure, clinical signs, and blood testing. Clinical signs of Lyme disease in dogs include: lethargy, loss of appetite, fever, lymph node enlargement, lameness that shifts from leg to leg, and joint swelling, heat, and pain. The red “bulls-eye” lesion at the site of the tick bite seen in humans (erythema migrans) is not usually observed in dogs with Lyme disease. Laboratory testing for Lyme disease has recently been simplified by the introduction of an in-house test developed by IDEXX Laboratories (SNAP®3Dx). The test uses only a few drops of blood, takes about ten minutes to run, and indicates a dog’s status for Lyme disease as well as for Heartworm infection and *Ehrlichia canis* infection. Interpretation of positive test results in a dog that is showing clinical signs of Lyme disease is straight forward and indicates the need to treat for Lyme disease. However, interpretation of positive test results in a well vaccinated dog or in a dog with no clinical signs of Lyme disease is somewhat more complicated. These situations should be discussed with the veterinarian on an individual basis.

TREATMENT

Fortunately, Lyme disease generally responds quickly to treatment which involves two to four weeks of antibiotic therapy with either Doxycycline or Amoxicillin. These drugs are generally well-tolerated by most dogs when given with food. It is very important that the antibiotic be given for the entire length of time for which it is prescribed. Rarely, additional therapy is required to address the effects of the disease on the joints, kidneys, heart, or nervous system.

PROGNOSIS

Response to treatment is usually seen within three to five days of starting antibiotics and full recovery is expected. If rapid recovery is not seen another diagnosis should be considered. Relapse or re-infection is possible and generally responds well to antibiotic therapy. Long term side-effects involving the joints, kidneys, heart, or nervous system are rarely seen.

PREVENTION

The prevention of Lyme disease in dogs involves several steps.

First, consider avoidance of areas that Deer ticks are likely to frequent including fields with tall grass or weeds and wooded areas.

Second, consider vaccination for your dog if he or she is at risk of contracting Lyme disease. Vaccination has been shown to be highly effective in preventing Lyme disease in dogs.

Third, topical tick prevention with such products as Frontline Plus or Advantix can be useful in killing ticks after they attach to your dog, but before the bacteria can be transmitted from the tick to the dog. These topically applied products are likely to be more effective than tick collars.

Fourth, check your dog frequently for ticks. Prompt removal of any ticks found on your dog will minimize the risk of your pet contracting Lyme disease as well as a number of other diseases that can be transmitted by ticks.

If you ever have any additional questions regarding any of the above information, please do not hesitate to contact us. Visit us online at www.WhiteBearAnimalHospital.com.

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